

Monthly Progress Report
Corrective Measures Study (CMS) for Potential Release Site (PRS) 16-021(c)
July 2002

This report summarizes Los Alamos National Laboratory (LANL) activities completed during July of fiscal year (FY) 2002 on the CMS for PRS 16-021(c), the 260 outfall. Both the activities described in the CMS plan ([LA-UR-98-3918]), which was submitted to the New Mexico Environment Department-Hazardous Waste Bureau [NMED-HWB] on 9/30/98, and approved by NMED-HWB on 9/8/99), and other related activities are described herein.

Description of Activities and Contacts

High Performing Team (HPT) Activities – The 260 HPT did not meet in July 2002.

The next HPT meeting is scheduled for August 12, 2002. Agenda items may include ecorisk results, a data update, and points of compliance.

RCRA Facility Investigation (RFI) Report and CMS Plan– No new activities occurred during this reporting period.

Best Management Practices (BMPs)– BMPs are inspected quarterly and following significant precipitation events. No BMP repairs were required in July.

CMS Hydrogeologic Investigations–CMS hydrogeologic investigations include ongoing Phase II RFI sampling as well as continuing investigations outlined in the CMS plan.

The ongoing Phase II RFI sampling program includes collecting samples at Martin and Burning Ground spring every other day for stable isotopes. SWSC spring remains dry. Isotope samples were selected from those collected historically for submittal to the laboratories/

The wells, both alluvial and deep, were checked for both presence and level of water. Four out of five alluvial wells in Canon de Valle contained water, the uppermost well was dry. No water was present in all three alluvial wells in Martin Spring Canyon. All of the intermediate depth boreholes were dry.

The summer quarterly sampling was completed. This included flow-integrated sampling. Samples were collected at all of the prescribed localities that contained water. The system remains relatively dry, although water was present in the 90s Line pond due to recent precipitation. The headwaters of Canon de Valle were dry. The system wet up slightly at the end of the month

Sediment resampling to examine concentration dynamics since the 1996 sampling was completed.

Two samples from precipitation events were collected and archived for analysis during this reporting period.

For well CdV-R-37-2, work was continued on the Well Completion Report. An internal rough draft was completed.

Quarterly sampling was completed at the CdV-R-15-3 and CdV-R-37-2 wells. There were no unusual field parameters for any of the samples. The vadose zones screens for each of these wells were dry.

Groundwater modeling to investigate conceptual models for the deep-perched zone at TA-16 was begun and initial results were evaluated.

Ecological Risk Pilot–

Work was continued on consolidating the aquatic and terrestrial system study and implementation plans. Resampling for aquatic toxicity was completed. Data analysis to support the combined MDA-P and TA-16-260 ecorisk evaluations was continued.

CMS Bench and Pilot Studies–Bench and pilot studies continued in collaboration with the Innovative Treatment Remediation Demonstration (ITRD) Program. The ITRD HE program is focused on two DOE sites: LANL and Pantex. Studies include:

1. A study of the passive barrier technology of Stormwater Management, Inc., which is potentially useful for removing HE and barium from waters.
2. A study of chemical treatment of HE-contaminated soil using zero-valent iron (ZVI). The LANL portion of this study has been completed.
3. At Pantex, a study of in situ anaerobic bioremediation of HE using gas-phase carbon additions.
4. A study of ex situ anaerobic bioremediation of HE-contaminated soils using the W. R. Grace process, which combines anaerobic bioremediation with a ZVI treatment. The LANL portion of this study has been completed.
5. A study of HE composting. Amendments appropriate to northern New Mexico were tested on both clean and contaminated soils. The LANL portion of this study has been completed. The internal report was completed on these studies
6. A study of immobilization of barium-contaminated sediments from Cañon de Valle. A preliminary study has been completed and further investigations are planned for FY 02.
7. Phytoremediation studies in Cañon de Valle. Native plants are being evaluated for their ability to remove HE from surface waters. Preliminary results suggest that low levels of phytoremediation are occurring in the Burning Ground spring area.
8. Oxidation, reduction, and in-situ bioremediation studies of groundwater contamination at Pantex.

The HEPS field team continued troubleshooting on the Stormwater Management system to determine why it does not appear to be working effectively for barium. Partition coefficient determinations to support stabilization and natural attenuation investigations were completed. As part of the phytoremediation studies, plant samples were collected to evaluate whether plant-induced nitrate breakdown is occurring in Canon de Valle and Martin spring canyon.

Interim Measure (IM) –

The IM report was completed and submitted to NMED on July 31, 2002.

Public and Stakeholder Involvement– No activities.

Percentage of CMS Completed

LANL estimates 89 % of the CMS has been completed to date. Note that this percentage does not reflect the deep and potential intermediate wells that will be drilled per the CMS plan addendum.

Problems Encountered/Actions to Rectify Problems

General Problem (1) The Cerro Grande fire has severely impacted the 260 RFI/CMS activities. These problems have been discussed in detail in previous monthly reports.

Action to Rectify General Problem (1): LANL will work closely with NMED through the HPT to mitigate the effects of the Cerro Grande fire. Effects of the fire on the monitoring data in Canon de Valle continue to be addressed.

CMS Hydrogeologic Investigations

Problem (1): Questions relating to the quality of data from well R-25 remains a concern to the TA-16-260 team.

Action to Rectify Problem (1): LANL will evaluate the data from the quarterly sampling of the R-25 well to evaluate its reliability.

CMS Bench and Pilot Studies

Problem (1): The fact that the Stormwater Management unit does not appear to be removing barium is of concern,

Action to Rectify Problem (1): LANL will work with ITRD to determine if there are problems with the barium-specific resin and will potentially evaluate other barrier materials.

IM

None.

Key Personnel Issues

None

Projected Work for August 2002

RFI Report and CMS Plan

- None

BMPs

- Inspection of existing BMPs following significant precipitation events will continue.

CMS Hydrogeologic Investigations

- Maintenance of autosamplers
- Stream profiling to determine monsoonal response in Canon de Valle.
- Checking for levels and presence of water in alluvial and deep wells.
- Sampling of flow-integrated autosamplers
- Continued precipitation monitoring and sampling for stable isotopes.
- Data analysis
- Peer review of CdV-R-37-2 Well Completion Report
- Groundwater and natural attenuation modeling
- Review of data quality objectives for drilling

Ecological Risk Pilot

- Submittal of rodent samples to the laboratories.

CMS Bench and Pilot Studies

- Evaluation of data from Stormwater units
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- Stabilization studies

IM

- Task complete.

Public and Stakeholder Involvement

None anticipated.